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(71) Applicant (for all designated States except US):  
**PORTABLE OPHTHALMIC DEVICES, INC.**  
[CA/US]; 4374 State Street, Unit 1A, Bettendorf, IA  
52722 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PHILLIPS, Scott**  
[CA/CA]; 2050 Lorne Terrace, Victoria, British Colum-  
bia V8S 2H8 (CA). **HANSEN, Bjarne** [CA/CA]; 1000 De

Costa Place, Victoria, British Columbia V8T 5H8 (CA).  
**EHRECKE, Timothy** [US/US]; 4413 Winston Place, Bet-  
tendorf, IA 52722-7202 (US).

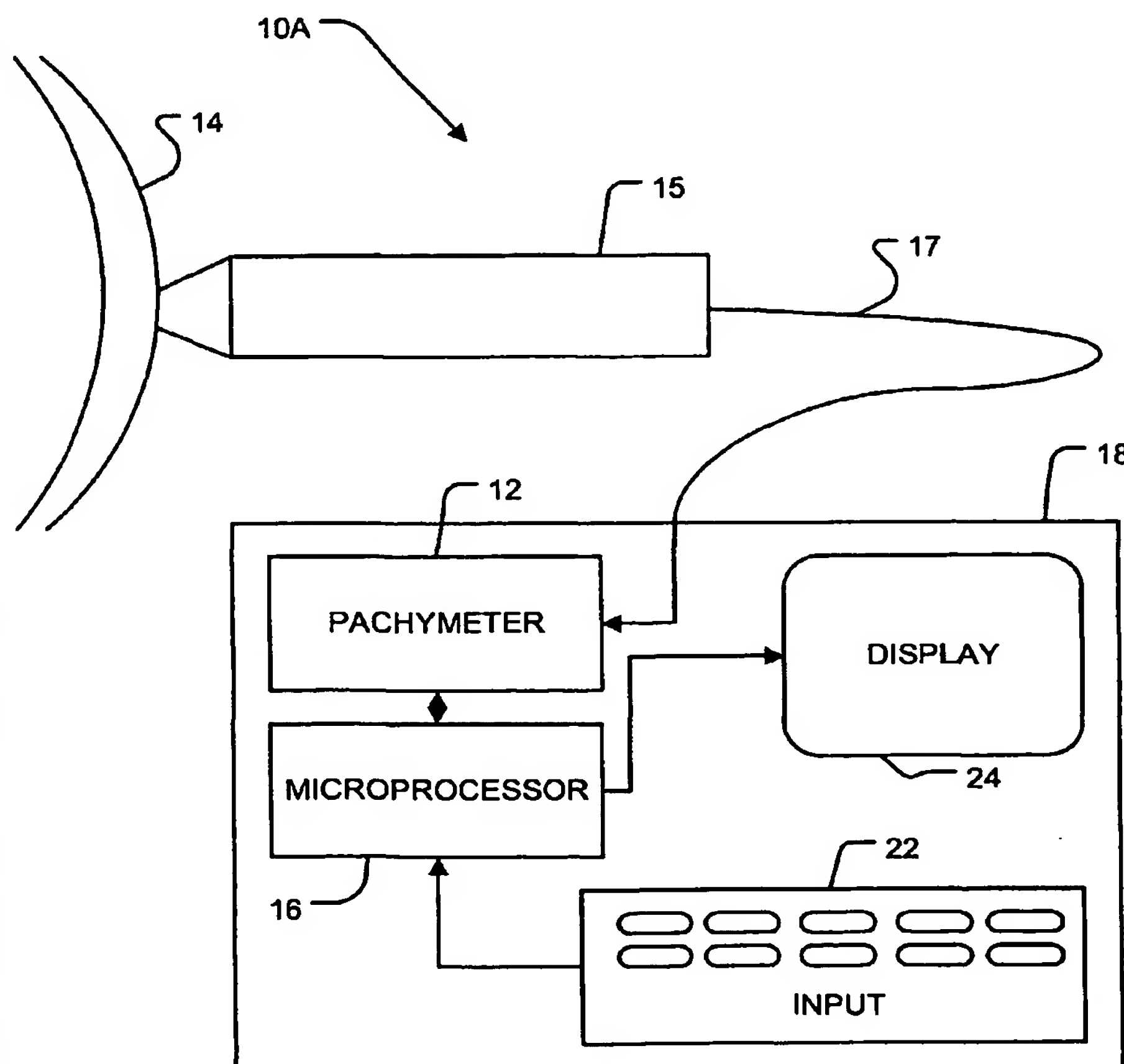
(74) Agents: **MANNING, Gavin** et al.; 480 - 601 West Cor-  
dova Street, Vancouver, British Columbia V6B 1G1 (CA).

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(54) Title: PACHYMETER



(57) Abstract: A pachymeter apparatus for measuring corneal thickness is configured for the calculation of intraocular pressure ("IOP"). The apparatus includes a pachymeter (12) for measuring corneal thickness as well as a microprocessor (16) and a user interface (22). A reading of IOP from a tonometer can be entered into the device and corrected according to the pachymeter reading of corneal thickness. Correction algorithms are user selectable and user customizable. A pachymeter may have a graphical display (24) which displays multiple locations at which measurements are to be taken. A pachymeter may use a capacitor (52) charged by a variable current supply (54) to measure times for signals to be reflected from a back side of a cornea.



Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA2004/000537

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61B3/10 A61B3/16

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 A61B G01F G01B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)  
EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 113 542 A (AKHTAR SAJJAD ET AL) 5 September 2000 (2000-09-05) column 2, line 50 - column 4, line 28; figure 1 column 4, lines 29-38	1,2,5,6, 9
A	column 3, lines 41-43; table i	7,8
X	US 6 083 161 A (O'DONNELL JR FRANCIS E) 4 July 2000 (2000-07-04) column 2, line 60 - column 3, line 34	1,2
A	US 4 750 117 A (GREGORY ROBERT O) 7 June 1988 (1988-06-07) column 14, lines 35-49; figure 3	3,4

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

30 July 2004

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European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Kronberger, R

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6113542	A	05-09-2000	NONE	
US 6083161	A	04-07-2000	NONE	
US 4750117	A	07-06-1988	CA 1253246 A1 DE 3588027 D1 DE 3588027 T2 EP 0186610 A2	25-04-1989 20-07-1995 26-10-1995 02-07-1986

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2004/000537

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

A device for determining corrected intraocular pressure comprising a corneal pachymeter, an input device for receiving a tonometer reading and a microprocessor configured to modify said tonometer reading based on the corneal thickness data.

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2. claims: 12-13

A device for measuring thickness of a layer comprising an ultrasonic transducer and a timing circuit with a capacitor and a charging circuit to charge the capacitor at a rate which decreases with time.

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3. claims: 10,11,14-15

A pachymeter and a pachymeter combined with a tonometer, the pachymeter comprising a display with a graphical representation of an eye marked with indicia to indicate the location at which pachymeter measurements ought to be taken.

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